

## ABSTRACT OF THE INVENTION

A method of imaging using magnetic resonance includes administering hyperpolarized noble gas to a subject in a region to be imaged, applying a magnetic field of a magnitude between about 0.0001 Tesla and about 0.1 Tesla to the subject at least in the region of the subject to be imaged, detecting a spatial distribution of magnetic resonance signals of the hyperpolarized noble gas in the subject, and producing a representation of the spatial distribution.

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